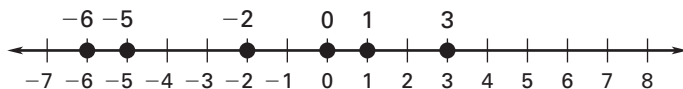


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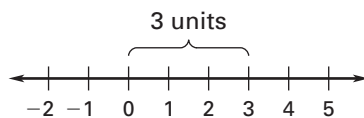
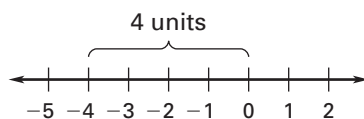
For use with pages 22–26

GOAL Compare and order integers.**VOCABULARY**The **integers** are the numbers . . . , -3 , -2 , -1 , 0 , 1 , 2 , 3 , . . .**Negative integers** are integers that are less than 0. **Positive integers** are integers that are greater than 0.The **absolute value** of a number is its distance from 0 on a number line.Two numbers are **opposites** if they have the same absolute value but different signs. For example, -5 and 5 are opposites.**EXAMPLE 1** Graphing and Ordering IntegersUse a number line to order these integers from least to greatest: 3 , 0 , -6 , -2 , 1 , -5 .**Solution**

Graph the integers on a number line.

Read the numbers from left to right: -6 , -5 , -2 , 0 , 1 , 3 .**Answer:** The integers from least to greatest are: -6 , -5 , -2 , 0 , 1 , 3 .**EXAMPLE 2** Finding Absolute Value

State the absolute value of the number.

a. 3 **b.** -4 **Solution****a.**The distance between 3 and 0 is 3 . So, $|3| = 3$.**b.**The distance between -4 and 0 is 4 . So, $|-4| = 4$.

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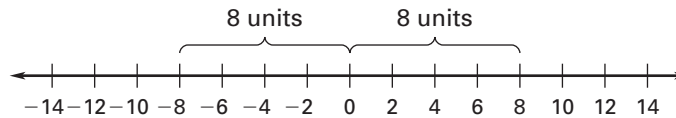
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EXAMPLE 3 Finding Opposites

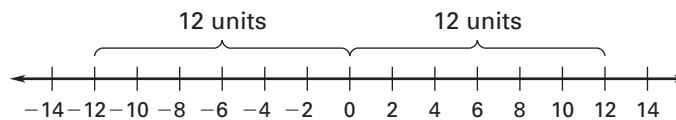
State the opposite of the number.

a. -8 b. 12 **Solution**

a.

The opposite of -8 is 8 .

b.

The opposite of 12 is -12 .**Exercises for Examples 1–3**

Graph the integers on a number line. Then write the integers in order from least to greatest.

1. $16, -4, -9, 5, -1$ 2. $5, -5, 0, -11, 20, 17$

State the absolute value of the number. Then state the opposite of the number.

3. -24 4. 41 5. -63 **EXAMPLE 4 Evaluating Variable Expressions**Evaluate the expression $|x| - 4$ when $x = -10$.**Solution**

$$\begin{aligned} |x| - 4 &= |-10| - 4 \\ &= 10 - 4 \\ &= 6 \end{aligned}$$

Substitute -10 for x .The absolute value of -10 is 10 .

Subtract.

Exercises for Example 4Evaluate the expression when $x = -7$.6. $9|x|$ 7. $-7 + (-x)$ 8. $18 + |x|$